

**AN APPLICATION SPECIFIC INTEGRATED CIRCUIT HAVING A
PROGRAMMABLE LOGIC CORE AND A METHOD OF OPERATION THEREOF**

ABSTRACT OF THE DISCLOSURE

The present invention provides an application specific integrated circuit and a method of operation thereof. In one advantageous embodiment, the application specific integrated circuit includes a programmable logic core having an array of dynamically configurable arithmetic logic units. This particular embodiment further includes a network interface subsystem that includes a media access controller. The network interface is configured to employ a first portion of the programmable logic core that interfaces with the media access controller and that is configurable to process control data. This embodiment further includes a data transmission subsystem associated with a memory device, and configured to employ a second portion of the programmable logic core that stores received data from the network interface subsystem to the memory device and sends transmission data from the memory device to the network interface subsystem in response to an instruction from a host system.